Photography Chemicals Management and Silver Recycling in Schools

A Series of Best Management Practices

Photographic processing involves the use of harsh chemicals and the generation and management of silver wastes, a characteristic (D011) hazardous waste. This guidance document will serve to demonstrate how waste streams from photo developing can be reduced.

Major sources of recoverable silver:

- Developer
- Rinse
- Fixer

Developer and Fixer

Untreated developer and fixer must be handled as hazardous waste, and managed according to all relevant rules and regulations. However, if the facility utilizes a silver recovery unit, the spent liquid can be discharged to a wastewater treatment facility with permission. Testing will be required to determine levels of silver in the spent developer. Usually there is too much silver present to meet the 50 ppb limit to be discharged to a septic system.

Rinse

Testing of the rinse water will determine what levels of silver, alcohol and solvent are present in untreated rinse, levels of silver will be much lower than the developer. If the testing reveals that rinse is within the defined limits, it may be discharged to a wastewater treatment facility with permission. Usually there is too much silver present to meet the 100ppb limit to be discharged to a septic system.

Contact Mitch Locker at (603) 271-2858 for information on industrial waste water discharge limits to septic systems, or George Carlson at (603) 271-2052 for information on industrial waste water discharge limits to treatments plants.

Silver Recovery Unit

The reclaimed silver from the silver recovery unit must be handled as a hazardous waste, but can be sold as a precious metal to a reputable dealer who is responsible for its proper management. A hazardous waste hauler can also accept the waste, as a method of recycling, and typically no fee will be charged. A manifest must be initiated in either case to show the wastes' proper management.

Scrap film and scrap printing paper
In color photo finishing, all of the silver is removed from the film or paper during the photofinishing process. Processed scrap film and paper are not considered hazardous waste, and may be treated as solid waste. Unprocessed film or paper will have some silver residue, but data suggests that silver in this form will not leach out of a landfill over time. Try to prevent accidentally soaking the film ends in fixer; to do so will leave a coating of leachable fixer that may make the film ends hazardous.

If you are using a silver recovery unit, ask your equipment supplier if they will take your scrap film. Some recycling companies will collect unprocessed film ends.

Recycling
Silver bearing fixer solutions are a regulated hazardous waste, and must be handled, stored and shipped as dictated by the *Hazardous Waste Rules*. A registered hazardous waste transporter must pick up the fixer solution, and document the shipment on a manifest. Note on the manifest that the waste is "for recycle" in order to be exempt from the New Hampshire hazardous waste fee.

Notifying
If you are generating this kind of silver-bearing waste, the facility must notify the N.H. Department of Environmental Services and obtain an EPA Identification Number from the Reporting and Information Management Section 271-2921. When you notify, you will also need to obtain your certification as a Small Quantity Generator. You will find a self-certification program online at **www.des.nh.gov/sqg/index.html** .

New Hampshire Pollution Prevention in Schools Project
http://www.des.nh.gov/nhppp/Schools/ or call (603) 271-0878
This document was paid for in part by a Pollution Prevention Incentives for States grant from U.S. EPA-New England to assist the school sector.